

### REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-44 are in this case. Claims 1-44 have been rejected under § 102(b) and further under § 103(a) and further under § 112 second paragraph. Independent claims 1, 16 and 35 have been amended and independent claim 41 has been cancelled. Dependent claims 2, 4, 6, 15, 17, 22, and 43 have been amended. As a result of these amendments, claim 2 is now an independent claim. Claims 5, 10, 12 and 32, 34 have been cancelled. The Applicant respectfully notes that reference to claims "1-46" throughout the instant office action is in error, as only 44 claims were filed.

The claims before the Examiner are directed toward improved methods of producing carboxylic cationites.

### **§ 112, Second Paragraph Rejections**

The Examiner has rejected claims 1-44 under § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, the Examiner has pointed out that "... thereby obviating the need for dispersing the carboxyl cationite in a dispersing medium." is indefinite. Applicant accepts this linguistic analysis. Applicant responds by amending claim 1 as follows:

~~"... thereby obviating the need for dispersing the carboxyl cationite in a dispersing medium."~~

Further, the Examiner has correctly pointed out that the recited "first solvent" and "first mixture" are indefinite because no second solvent or second mixture is recited. Applicant has responded by removing the word "first" at every occurrence throughout the claims as detailed hereinabove.

Further, the Examiner has asserted that the recited “from about 0.5 to about 1N sodium hydroxide of pH 8” of claim 15(ii) is indefinite because pH will be a function of normality. The applicant responds by amending claim 15 to read “from about 0.5 to about 1N sodium hydroxide of pH 8”

Applicant strongly asserts that these amendments do not constitute an introduction of new matter.

Further, the offered amendments are made at the Examiner’s request.

The Examiner’s rejections under § 112, Second Paragraph are moot in view of these amendments.

#### **§ 102(b) Rejections - Kuznetzova**

The Examiner has rejected claims 1-44 under §102(b) as being anticipated by US 4,120,831, hereinafter Kuznetzova.

The applicant respectfully suggests that the essential differences between the invention of the instant application and the teachings of Kuznetzova have not been fully understood by the examiner. In order to expedite prosecution, amendments to claims 1 and 2, which make those differences more clear, are offered. Specifically, the Markush group of the original claim 1 has been divided.

The three members of the Markush group are:

- (i) an aqueous solution of acetic acid wherein an amount of said acetic acid is in a range of from about **60% to about 100%**, volume per volume;
- (ii) a mixture of an **organic solvent and water**; and
- (iii) a mixture of an **organic solvent and acetic acid**. (emphases added)

Item (i) is now presented alone for examination in claim 1. This makes amended claim 1 identical to original claim 5. Please cancel claim 5 without prejudice. Items (ii) and

(iii) are now presented as a two member Markush group in amended claim 2. Applicant stresses that claim 2, as originally filed, already specifically referred to items (ii) and (iii). In order to facilitate this division, claim 2 has been rewritten in independent form. These amendments more clearly differentiate the invention of the instant application from the prior art because claim 2 defines **organic solvent** as being "selected from the group consisting of dimethylformamide, monobutyl glycolate, polyethylene glycol and an alcohol".

Applicant respectfully traverses the Examiner's § 102(b) Rejections based upon Kuznetzova as follows:

With regard to independent claim 1 as currently amended, the limit of "60% to about 100%" Acetic acid is patentably distinct from Kuznetzova's 5-50% acetic acid;

With regard to independent claim 2 as currently amended, Kuznetzova neither hints nor suggests that the use of dimethylformamide, monobutyl glycolate, polyethylene glycol or an alcohol is necessary, desirable, or even feasible;

With regard to independent claim 16 the limit "dispersing said pre-polymer in a solution of alcohol to form a dispersion mixture" renders the claimed method patentably distinct from Kuznetzova because Kuznetzova neither hints nor suggests that the use of an alcohol is necessary, desirable, or even feasible for dispersion;

Further, with regard to independent claim 16 the limit "dispersing said pre-polymer in a solution of alcohol to form a dispersion mixture" renders the claimed method patentably distinct from Kuznetzova because Kuznetzova teaches against this practice by stressing that the use of siloxanes as dispersing medium is advantageous (see examples 1-20 of Kuznetzova);

With regard to independent claim 35 the limit "dispersing said pre-polymer in an aqueous solution of an inorganic salt to form the particulate matter" renders the claimed method patentably distinct from Kuznetzova because Kuznetzova neither hints nor suggests

that the use of an aqueous solution of an inorganic salt for dispersion is necessary, desirable, or even feasible; and

Further, with regard to independent claim 35 the limit “dispersing said pre-polymer in a an aqueous solution of an inorganic salt to form the paticulate matter” renders the claimed method patentably distinct from Kuznetzova because Kuznetzova teaches against this practice by stressing that the use of siloxanes as dispersing medium is advantageous (see examples 1-20 of Kuznetzova).

Applicant believes that the Examiner’s assertion that Kuznetzova anticipates the instantly claimed invention is based upon a reading of the phrase “organic solvent and water” as used in the instant application on Kuznetzova’s “5-20% acetic acid” (column 3; line 16). Applicant respectfully suggests that, in light of the amendments detailed hereinabove, such a reading is inappropriate.

The Examiners rejection of independent claims 1, 2, 16 and 35 as being anticipated by Kuznetzova under §102(b) is traversed. All claims which depend from these claims are therefore not anticipated by Kuznetzova under §102(b). Further, the Examiner’s specific rejections of claims 12 and 34 as being anticipated by Kuznetzova under §102(b) is rendered moot by cancellation of claims 12 and 34. All rejections employing Kuznetzova under §102(b) are traversed.

#### **§ 102(b) Rejections - Bolto**

The Examiner has rejected claims 1-44 under § 102(b) as being anticipated by US 3,941, 724 hereinafter Bolto.

The objective of the Bolto invention is “preparation of a amphoteric resin [sic]” (See Examples 1-4 of Bolto). Thus, the abstract of Bolto, cited by the Examiner, states:

*“In the known process of manufacturing **an amphoteric polymeric composition** which process comprises firstly polymerising **a mixture comprising a monomer containing a basic***

*group and a monomer containing an acidic group, the improvement of carrying out the process in the presence of a solvent system comprising formic acid.” (emphasis added)*

By contrast, the present invention is directed towards methods of producing **carboxylic cationites** (i.e resins).

Applicant respectfully traverses the Examiner’s § 102(b) Rejections based upon Bolto as follows:

With respect to independent claims 1 and 2 of the instant application, the claimed method(s) conclude with “...to form a swollen block of the **carboxyl cationite**” making the **carboxylic**, as opposed to amphoteric, nature of the resultant product an inherent limit of the claimed method. Bolto teaches against the method instantly claimed in claims 1 and 2 by teaching polymerization of “*a mixture comprising a monomer containing a basic group and a monomer containing an acidic group*”. Combination of the basic and acidic groups is clearly intended to produce an amphoteric resin, as Bolto clearly states in Examples 1-4.

Further, with respect to independent claim 1 of the instant application, the claimed method requires use of “...an aqueous solution of acetic acid wherein an amount of said acetic acid is in a range of from about 60% to about 100%,...”

Bolto specifically teaches against the use of acetic acid and espouses the unique properties of formic acid (column 2; lines 34-41):

*“Formic acid appears unique in its ability to prevent self neutralisation reactions occurring during the preparation of amphoteric resins. We have found that other carboxylic acids such as acetic acid or propionic acid are not satisfactory solvents for the polymerisation of a mixture of acidic and basic monomers as the resultant product has negligible thermally regenerable ion-exchange activity.” (emphases added)*

Further, with respect to independent claim 2 of the instant application, the claimed method requires use of a solvent “...selected from the group consisting of a mixture of an **organic solvent and water**, and a mixture of an **organic solvent and acetic acid**, and said

organic solvent is selected from the group consisting of dimethylformamide, monobutyl glycolate, polyethylene glycol and an alcohol...”.

Clearly, Bolto teaches against the use of “an organic solvent and acetic acid” for reasons detailed hereinabove. With respect to “an organic solvent and water”, Applicant believes that the Examiner’s assertion that Bolto anticipates the instantly claimed invention is based upon a reading of the phrase “organic solvent and water” as used in the instant application on Bolto’s “solvent system comprising formic acid ” (column 2; line 28). While formic acid is an organic solvent, Applicant respectfully suggests that, in light of the amendments detailed hereinabove, such a reading is inappropriate.

With respect to claim 16, clause (d) has been amended to read: “mixing said dispersion mixture with an aqueous solution of an inorganic salt to form the particulate matter of carboxylic cationites.” Support for this amendment is found in the preamble of claim 16 and 35 as well as in claims 1 and 2 and in numerous places in the specification. Applicant strongly asserts that no new matter is introduced by this amendment. However, the amendment serves to clearly distinguish between the method of claim 16 and the prior art teachings of Bolto which relate to production of “amphoteric resins” as argued hereinabove.

With respect to claim 35, clause (d) has been amended to read: “mixing said dispersion mixture with an aqueous solution of an inorganic salt to form the particulate matter of carboxylic cationites.” Support for this amendment is found in the preamble of claims 16 and 35 as well as in claims 1 and 2 and in numerous places in the specification. Applicant strongly asserts that no new matter is introduced by this amendment. However, the amendment serves to clearly distinguish between the method of claim 35 and the prior art teachings of Bolto which relate to production of “amphoteric resins” as argued hereinabove.

The Examiners rejection of independent claims 1, 2, 16 and 35 as being anticipated by Bolto under §102(b) is traversed. All claims which depend from these claims are therefore

not anticipated by Bolto under §102(b). The Examiner's specific rejection of claims 10 and 32 because they refer to use of triallyl cyanurate as a cross linking agent is rendered moot by cancellation of these claims.

All rejections employing Bolto under §102(b) are traversed.

All rejections under §102(b) are traversed.

**§ 103(a) Rejections SU 499276 in view of Kuznetsova**

The Examiner has rejected claims 1-44 under § 103(a) as being obvious with respect to SU 499276 in view of Kuznetsova. Applicant respectfully traverses. "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art." (MPEP § 2143.01) "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art..." (MPEP § 2143.01; see also *In re Vaeck* 947 F.2d 488, 20 USPQ2d 1438 [Fed. Cir. 1991])

In this case the Examiner has identified no hint or suggestion in either Kuznetzova or SU 499276 that a combination of the two references is useful, desirable or feasible. Further, there is nothing in either reference to motivate one of ordinary skill in the art to combine or modify teachings from these references to produce a method as instantly claimed.

With respect to independent claims 1 and 2 as currently amended, the use of 5-50% acetic acid as taught by Kuznetzova is not instantly claimed as detailed hereinabove.

With respect to independent claims 16 and 35, Kuznetzova teaches against the claimed methods, or alternately does not hint or suggest at the claimed dispersion conditions, as detailed hereinabove.

In summary, neither reference alone or in combination teaches, or even suggests, that which is claimed. Therefore, even if it were appropriate to combine these references in formulating a rejection, which the applicant respectfully contends it is not, such combination would still not produce the instantly claimed invention. The Examiner's rejection of claims 1-44 as being obvious with respect to SU 499276 in view of Kuznetsova under § 103(a) is traversed. All § 103(a) rejections are traversed.

#### **Additional Amendment**

Claim 22 has been amended to read: "The method of claim 21, wherein said organic solvent is selected from the group consisting of dimethylformamide, monobutyl glycolate and polyethylene glycol and an alcohol."


Support for this addition is provided by claim 2 which includes the same Markush group and by the specification (Page 3; line 6). Further, claim 23 begins "The method of claim 22, wherein said alcohol...". Thus, it is clear that the absence of "... and an alcohol." from claim 22 as originally filed was an inadvertent technical error which was not intended to limit the scope of the claim. As such, the applicant contends that rectification of the inadvertent error does not constitute an introduction of new matter.

The Examiner's co-operation in allowing correction of this inadvertent error is respectfully acknowledged.



In view of the above amendments and remarks it is respectfully submitted that independent claims 1, 2, 16 and 35 and hence dependent claims 3, 4, 6-9, 11, 13-15, 17-31, 33, 36-40 and 43-44 are in condition for allowance. All other claims have been cancelled. Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,



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